GRUMMAN plane news

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Super Tomcat soars again!

- pg. 3

Grumman expands its interest in composites

MILLEDGEVILLE, Ga., July 20, 1981 — As aerospace technology advances, composite materials such as boron, graphite/epoxy and Kevlar play an ever greater role in that advancement.

Today, to meet Grumman's future demand for parts from these high-strength, light-weight materials, officials of the company ceremonially broke ground to begin the expansion of the six-year old composites facility here.

About 500 people watched while John O'Brien, Grumman Aerospace executive vice president, along with Bill Zarkowsky, vice president and general manager of Milledgeville Operations, and Milton Folds, chairman for Industry and Trade for the State of Georgia, turned the ground over with a chrome-plated shovel. Meanwhile, in the background, crews were already at work preparing the ground for construction.

When work is completed in late 1983, the main building of Grumman's Plant 66 will encompass over 300,000 square feet of manufacturing and office space — an addition of 129,000 square feet. The expansion program includes the construction of a waste treatment facility.

"Today's groundbreaking provides me with a great deal of personal satisfaction and confirms the very high hopes I held back in 1974," O'Brien said. As vice president for Resources, O'Brien headed the site selection team that chose Milledgeville that year as the best location for the company's proposed composites manufacturing facility.

"I must, however, quickly point out that I would not be enjoying this deep sense of satisfaction were it not for the loyalty, talent, cooperation and hard work of a large number of people.

"The extent of the success achieved in a project like the Milledgeville operation ultimately rests with the people who make the project work," he said of the Grummanites in Plant 66.

Steady growth

Milledgeville has been consistently expanding since it opened for business in 1975 with 114 people. Today, there are more than 500 people producing parts for all of Grumman's major military and commercial aircraft programs. That number, according to O'Brien, should double once the expansion is completed.

He also announced that Grumman had purchased an additional 56 acres of property adjacent to the facility.

The expansion will continue the process of moving all Grumman's non-metallic parts production and related functions to one location, according to O'Brien, to free space for other programs.

Even as O'Brien and Zarkowsky spoke, workmen were installing new equipment in the present plant. A 50-foot long autoclave was lifted off a railcar and moved down the hill to the main building. As Zarkowsky pointed out, "We are going to add to the building and to the spirit of the community.

"We are going to do more difficult work; work that will take additional skills."

Milton Folds came to the groundbreaking as a representative for Georgia Governor George Busbee, who had been called to Washington, D.C. "He asked me to say to the Grumman people, 'Thank you. Thank you for the original vote of confidence. There had not been, previously, the kind of operation you have here.'

"He asked me to express further thanks to you for reinforcing that confidence," said Folds.

When asked what effect the expansion of Grumman's plant would have, Folds replied, "Tremendous. There is that increase in payroll that has a ripple effect throughout the region. There is an enormous impact from those jobs."

"It can't help but be a plus," stated Milledgeville City Councilman Gus Pursley. He even commented on the Grummanites who moved south to join Plant 66. "They have not hesitated to become a particularly active part of our community."

Here we'll build. *Executive Vice President John O'Brien, Vice President Bill Zarkowsky and Georgia's Milton Folds (L to R) officially begin the expansion of Grumman's composite facility in Milledgeville.*

what do you think?

Trouble looms ahead once again for the U.S. Social Security System. The government recently announced that funds will be completely depleted by 1982 unless changes occur. We asked Grummanites in Plant 25 what they thought about the Social Security problem. What do you think?

Betsy Alexander

Frankly, I'm infuriated about the Social Security situation. Both my husband and I have worked all of our lives and have paid into it for so many years, that we're really depending on it — without it we'll really be up a creek. My husband plans to retire in 2 years. I wonder if it would be better to retire right now, instead of waiting like we planned.

Charles Ridolf

I've been working for 40 years now. I'm 57 and I wanted to collect at 62. Now that I'm just about ready to collect — the money's not there. I believe the government can go to other means to help finance Social Security instead of punishing the elderly and those of us who plan to retire in the near future.

Lance Gonzalez

The system definitely needs help right now. I think the immediate problem can be solved if Reagan and the Congress decide on an alternate plan to finance things like Medicaid and Medicare other than using Social Security money. I certainly do not think that the retirement age should be pushed back.

I believe Social Security can be trimmed by excluding prisoners from receiving benefits, and through reevaluating disability benefits.

Edith Sundman

I am concerned about Social Security because I'm at that stage in my life. I'm very happy that Congress is discussing it now and looking for solutions. Social Security has become too diversified; it has been nibbled at and nibbled at for a great number of years. But the burden shouldn't fall on the younger generation either, there are now more and more elderly for the young to support and they just can't do it.

Dot Renner

I am concerned about Social Security, that's for sure. I've been counting on it for all these years . . . and to think now all of a sudden that we won't get it . . . it's frightening. Being a widow, I don't have the nest egg.

The government throws money away; I've seen it. They should be able to pull strings from other areas. I want them to investigate the places where people are milking the system. To threaten the elderly with this is so unfair. I've been looking forward to my Social Security without worry — and now I'm worried.

F-14 powered by GE engines begins testing

CALVERTON, N.Y., July 14, 1981 — Grumman Aerospace's Super Tomcat No. 7 soared through its maiden flight equipped with General Electric's derivative fighter engine, the F101 DFE, today.

The successful 90-minute test flight marked the beginning of a three-month flight test program at Calverton. The limited development program is designed to assist the Navy in future F-14 planning and procurement.

Slated to enhance the capability of the twin-engine Tomcat, the GE F101 DFE is in the 26,000-29,000-lb thrust class. Currently, the F-14 is powered by the Pratt and Whitney TF30, an engine in the 19,000-21,000 pound class. The new GE engine uses the core engine from the F101 which was developed for the B-1 bomber, and a scaled-up fan and augmentor nozzle from the F404 engine which is currently being used in the Navy's F-18.

Super takeoff. *Piloted by Joe Burke, the Super Tomcat equipped with General Electric's derivative fighter engine ÷ the F101 DFE, reached an altitude of 35,000 feet and high subsonic speeds during its 90-minute first flight at Calverton last week.*

Super flight

Piloted by Grumman test pilot Joe Burke with Roger Ferguson in the weapons system seat, the Super Tomcat reached an altitude of 35,000 feet and high subsonic speeds before heading back to Calverton for a series of touch-and-goes.

"Everything went picture perfect," reports Jack Hassett, Grumman's F-14/101 program manager. "We're in for a highly successful test program, judging from this maiden flight."

The man who flew the Super Tomcat agrees whole-heartedly.

"It's a terrific aircraft," says Burke. "The F-14 was outstanding throughout the flight. . .no gripes. . . good response. Those two new engines pack plenty of power. If everything goes as smoothly as today, we're in for a very successful engine test program."

Though the Super Tomcat is aircraft No. 7, it has seen little action since its days as a flight test aircraft in the early Seventies. F-14 No. 7 was originally powered by an advanced development engine that was to replace the current Tomcat powerplant, but the development program was eventually scrapped.

Welcome back

Tapped as the aircraft to be used in the new F-14/101 program, the Super Tomcat, with its distinctive red-, white-and-blue-color scheme, was brought out of storage late last year and transported to the Product Development Operations Center in Bethpage.

"This aircraft was ideal for the development program," says Hassett, citing the numerous flight test instruments already onboard.

A cadre of Grummanites who had worked on the Super Tomcat years ago began readying the aircraft for its summer mission. "It definitely helped having such an experienced, dedicated crew working on the Super Tomcat," says Arnie Schaffer, F-14/101 production manager. "When the GE engines arrived at Calverton, the aircraft was ready to go."

Rigorous testing

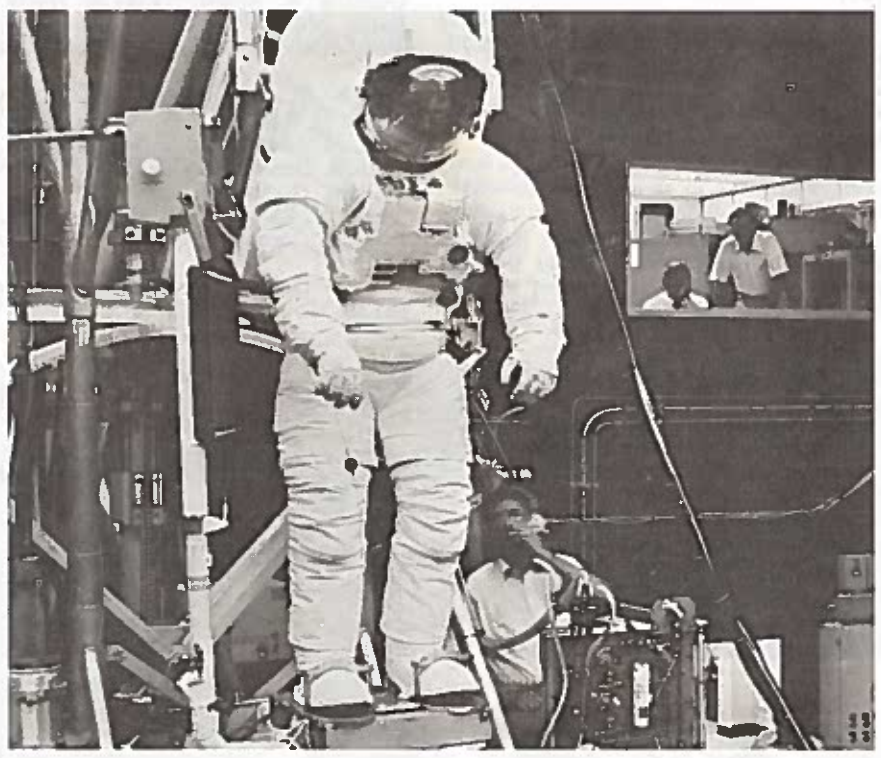
During the next three months, the F-14 powered by the GE engines will undergo an extensive flight test program — 21 flights by Grumman and three by Navy pilots from the Naval Air Test Center, Patuxent River, Maryland.

The F101 DFE engine has already demonstrated its suitability for the F-14 in two separate flight clearance tests. One engine was subjected to rigorous altitude testing at the Naval Air Propulsion Center facility, Trenton, New Jersey, and proved its operability at every test point within the F-14 flight envelope. This test phase was completed in February 1981.

In addition, the durability and life of the F101 DFE were recently established with the early June completion of F-14 accelerated mission testing (AMT) at General Electric's Evendale facility in Ohio. The AMT testing totalled over 2,000 simulated fighter missions hours on the same F101 DFE hardware. GE reports the AMT program was designed to demonstrate durability for both the F-14 and the General Dynamics F-16 mission profiles.

The first flight of the F-14 Super Tomcat follows closely the successful completion of the U.S. Air Force F-16/101 flight test program during which the aircraft accumulated 75 flight hours on a total of 58 flights.

General Electric reports that its F101 DFE engine is the first and most successful result of the Armed Forces' Engine Model Derivative Program. GE was awarded a 30-month contract in March 1979 as part of a cooperative plan between the U.S. Navy and Air Force for joint propulsion efforts to develop a potential alternative engine for advanced fighter aircraft.



Suits him fine. *Astronaut Don Lind visited Plant 14 last month to perform some evaluations on Grumman's Large Amplitude Space Simulator as part of the program to construct the Cherry Picker for the Space Shuttle. The Cherry Picker, says the program's manager Al Nathan, will be used to service the Solar Maximum satellite, a program managed by Grumman, still in orbit. After Lind completed his evaluations on the simulator, "He was very pleased with it," Nathan said.*

A. Krastel Jr.

T. Agiesta

L. Trifaro Jr.

H. Grandison Jr.

P. Pedersen

W. Dunekack

R. Collins

E. Matis

A. Conte

service milestones

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Henry C. Koraleski, Major Assy. (1)
Harry R. Belsha Jr., Fuselage Assy. (1)
William E. Voigt, Press (2)
Rudolph C. Polacek, Assembly (2)
John S. Caramanica, Forming Heat Treat & CM. (2)
Joseph M. Worthkoski, Maint. Wast Dispos & Grond (2)
Robert B. Munro, Syst. Test (6)
James A. Connelli, Fluids (6)
John Lucki, Structures (6)
Alfred A. Cestari, Gov't Matl. Cntrl. (21)
Walter J. Saccareccia, Mfg. Est. Adv. Prj. (25)
Arthur J. Gross, Eng. Resources (25)
Adam Kunz, Prog. Plnng. Cntrl & Budg. (25)
John A. Tarasevich, Reqts. Plnng. (30)
Joseph A. Shanahan, Prog. Matl. Mgmt. (40)
John A. Otero, Cntrls & Mech. (40)
Walter R. Clark, Washington D.C. Office (50)

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Due to space limitations, the remaining 15-year anniversarians not listed in this month's service milestones will appear in the August 7th issue of PLANE NEWS.

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Jack B. Cabre, Mat. Mgt. (77)

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Raymond E. Silhan, Assy. Method & Plnng. (1)
William C. Pierce, Pride Line (2)
William E. DeMasters, Pride Line (2)
George R. Crawford, Tanks & Ducts (2)
Gunther A. Schiel, Tanks & Ducts (2)
Ralph Milito, Ctr. Sect.-Sub. Assy. (2)
John A. Grimaldi, Mech. Struct & Proto. (2)
Joseph R. Schnitzer, Hydraulics (2)
Ernest G. Rasmussen, EBW-Final Assy. (2)
Richard Mosco, Prod. Superv. (2)
John R. Dombkowski, Jigs & Fixtures (2)
William L. McKinnon, Mach. Shop (2)
Daniel V. Cusick, Central Setup Area (2)
Louis P. Corneau Jr., Comp. & Adhesives (2)
Michael Cartabuke, Comp. & Adhesives (2)
Raymond J. Froehlich, Maint-Facil. Equip. & Gen (2)
Gustave A. Isaksson Jr., Press (3)
Edmund A. Kaiser, Convent. Machs. (3)
Edward G. Grabowski, Convent. Machs. (3)
Joseph Gattulli, Spotweld (3)
Thomas L. Brierton, Details (3)
Joseph C. Maraglio Jr., Business Mgmt & Admin (3)
Walter E. Haacke, Mach. Op-Tech. Serv. (3)
Charles Huebner, Prod. Superv. (4)
Albert W. Pilnacek, Prod. Superv. (4)
George D. Reuther Jr., Avionics Inst. (5)
Rudy A. Ossenfort, Supp. Equip. Prod. (5)
George Ludwig Jr., Supp. Equip. Prod. (5)
Ralph J. Nicholes, Matl. Short. Cntl. (5)
Hans G. Biegler, Paint (6)
Walter Hoehne Jr., Structures (6)
Charles J. Abrams, Matl. Coordination (6)
Frank J. Horsch Jr., Elements & Mat. Test Lab. (12)
William J. Muller, ILS Tech. Writ. (15)
Roy R. Gilmore, Central Shipping (17)
Walter M. Petersen, Repair Cntrl. (17)
Anthony M. Russo, Central Shipping Cntrl. (17)
Everett M. Green, Central Shipping Pack. (17)
Albert H. Bechhoff, Central Receiving (24)
Henry G. Wacker, Receiving Insp-General (24)
Fanffall Bollero, Electromech. Des. (25)
Kenneth J. Schakenback, Invent. Cntrl. (30)
Anthony Adamo, Invent. Cntrl. (30)
Maurice Cavallaro, Prod. Cntl-Parts Cntrl. (30)
John G. Foley, Procurement Servs. (30)
Onofrio T. Gallo, Gen. Subcontracts (30)
Charles R. Richardson, Maint. Admin. (30)
Frank G. Rini, General Acct. (30)
Mildred R. Mack, ILS Admin. (35)
Fred E. Renkewitz, Loads & Crit. (35)
Nicholas P. De Marino, Ops. Qual. Mgmt. Sys. (35)
Ronald A. Reiss, ILS Prog. Mgt. (40)
Jerome T. Minerva, ILS Tech. Servs. (40)
Douglas E. Fredericks, Elect. Equip. Des. (40)
Ronald Lenhart, Mech. Struct & Assem. (43)
Michael Delbuono, Mech. Detait & Fin. (43)
Stanley Musinski Jr., Ep. Circ & Mod. Fab. (43)
John A. Madeiros, F-14 Fin. Assy. (77)
John S. Zukowski, A/C Sys. Serv. (88)
Robert J. Groesbeck, Maint-Facil. Equip. & Gen. (111)

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August A. Krastel Jr., Sub-Assy Major (1)
Thomas L. Agiesta, Mfg. Prog. Mgt. (1)
Leonard Trifaro Jr., Sub-Assy Major (2)
William B. Lamm, Sub-Assy Major (2)
Hugh C. Grandison Jr., Propulsion Test (2)
Paul M. Pedersen, Mfg. Proposal Mgmt (2)
William H. Dunekack, Honeycomb Core Details (3)
Robert J. Collins, Ctr-Sect-Final (3)
Edward J. Matis, Prod. Superv. (3)
Walter Ciskowski, I.E. Flow Seg. Plnng. (3)
Alexandro Conte, Final Assy Struct. (4)
Richard A. Grigat, Struct. Test (5)
Raymond Sala, System Test (5)
Robert E. Dowd, Ops. Anal. (5)
Bruno A. Maiolo, Ops. Anal (5)
John W. Kellett Jr., Advanced Aircraft Sys. (5)
Clyde N. Stover Jr., Resources M+S (5)
Norman L. Garms, Repro Servs. (6)
Gerald R. Kern, Methods Elect. Tech. Sys. (6)
Edwin J. Cartoski, Flt. Crews (7)
Thomas R. Hughes, Prog. Matl. Mgmt (9)
James Karika Jr., Prog. Matl. Mgmt. (25)
Andrew C. Pfortsch, ILS Prog. Mgt. (25)
Peter C. Fales. Presentations Serv. (25)

(Continued on page 12)

R. Grigat

R. Dowd

J. Kellett Jr.

T. Hughes

J. Karika Jr.

A. Pfortsch

P. Fales

O. Sangesland

E. Bennett

J. LaRocca

H. Newman

R. Click

F. Rom

T. Rabbitt

R. Hubbard

M. Kelly

J. Leoniak

F. Schleider

Sterling memento

Moles joins big $$$ club

George Moles hit the top of the Project Sterling charts last month when he became $3,475 richer -- and Project Sterling's No. 1 winner thus far this year.

Over the past two months, Project Sterling awarded $22,000 in cash to over 100 industrious Grummanites who's ideas helped save the company $760,000.

Moles, leadman for Steel Parts in Plant 2, got the idea for his suggestion while working on the OV-1 Mohawk program. He suggested changing the filler wire to a high nickel base wire inside an anti-heat seeking device which is placed in the exhaust system of the aircraft. The change eliminated weld deposit cracking and saved the company an estimated $188,565 annually.

A Grummanite for 19 years, Moles also won an award from Project Sterling last year for outstanding personal achievement. According to Moles, if you're having trouble putting your idea into words, the most important thing is . . . "don't worry about the phraseology — just get the basic idea down." He also suggests to "seek out help in writing them, because there are coordinators who can assist you — that's part of their job. For instance, when I went to receive my award, three other men from my department were getting awards . . . and I had helped with all three."

Part of the money will go toward his daughter's tuition; she will be a freshman at the State University of New York at Binghamton this fall.

George Moles

$195 —Frank Glaab, Pl. 5.
$185 —Joe Murgia, Pl. 8.
$180 —Steve Holtzhauser, Pl. 77.
$150 —Thomas Swenson, Pl. 43; Thadeus Rydzewski, Pl. 44; Judith Coffey, Pl. 35; Jacques Riggio, Pl. 30.
$145 —James Eng, Pl. 2.
$140 —Edward Watson and James Heffernan, Pl. 2.
$130 —Charles Tyler, Pl. 6.
$125 —Frank Halfen, Pl. 5.
$120 —Edward Leonard, Pl. 77; Louis Pastore and Joseph Montello, Pl. 2.
$100 —Carmen DeSimone, Pl. 2; James Wallis, Pl. 30; Philip Bruckner, Pl. 12; Edward Smyth, Pl. 66.

obituaries

ALAN DREYER of Repair Control, Pl. 1, died June 11 at the age of 33. He had been with the company since 1966 and resided at 2587 New York Ave., Melville.

CHARLES T. SOHL of Mfg. Scheduling, Pl. 40, died June 13 at the age of 65. He had been with the company since 1965 and resided at 66 Station Road Bellport.

RENE VALDES JR., of Supplier Control, Pl. 30, died June 17 at the age of 52. He had been with the company since 1961 and resided at 12 Blue Top Rd., Setauket.

MYRNA LOUISE FOSTER of General Subcontracts, Pl. 30, died June 1 at the age of 43. She had been with the company since 1969 and resided at 108 Bell Ave., Flanders.

ERNEST F. TATJE of Elect. Harn. Fab., Pl. 44, died June 20 at the age of 54. He had been with the company since 1965 and resided at 21 Eva Path, Commack.

FLORENCE M. DENINE of Elect. Box & Pan Fab., Pl. 44, died June 23 at the age of 56. She had been with the company since 1971 and resided at 52 Devine Place, Amityville.

HERBERT F. KIESEWETTER of ILS Tech. Services, Pl. 25, died June 27 at the age of 59. He had been with the company since 1954 and resided at 7 Prospect Rd., Centerport.

PHILIP R. BOEHM of Contract Revenue, Pl. 30, died June 27 at the age of 49. He had been with the company since 1966 and resided at 192 Clarissa Dr., Bayshore.

JOHN R. CONTURSO of Receiving Insp., Pl. 44, died June 28 at the age of 54. He had been with the company since 1953 and resided at 30 Parkway S., Commack.

EMANUEL S. ORIANA of Maint-Rearrangement, Pl. 12, died June 30 at the age of 52. He had been with the company since 1963 and resided at 600 W. Paseo, Potrerro, Green Valley, Arizona 85614.

JAMES P. McGUIRK of Mfg. Program Mgt., Pl. 40, died July 5 at the age of 45. He had been with the company since 1958 and resided at 168-6th St., Hicksville.

LYNN D. PETERSON of Press, Pl. 2, died July 7 at the age of 19. She had been with the company since 1979 and resided at 130 Monell Ave., Islip.

It's hot

Another top winner for the months of May and June is Mike Melder, Associate Liaison Engineer in Plant 66's Technology Department. Melder won $2,010 for modifying the composite layup procedure for the EA-6B tracker jammer radome. Altering one of the steps eliminated the internal stresses and consequent delamination problems they had previously encountered.

Mike Melder

Melder has won other awards from Project Sterling but this is his largest to date. According to Melder, it wasn't hard for him to submit his idea because he had actually tried it before he wrote it up. "Yet", says Melder, "I wasn't going to submit the idea because I just took it as what I'm supposed to do as part of my job. But Tom Lahey nearly ordered me to submit it." His advice to other Grummanites who want to put forth a suggestion to Project Sterling: "Regardless of how insignificant you may think your idea is — it's worth it to submit it." Melder's award money will be spent paying for a new house.

There were 115 other winners in May and June and among them was Paul Scudieri, Final Assembly leadman in Plant 5. In his 30th year at Grumman, Scudieri won $1,410, his largest award from Project Sterling.

Scudieri was having problems with contour on the shuttle wing. Previously, they were getting their parts (the clips tieing in the rib caps) pre-drilled. He suggested leaving them blank and doing their own drilling. "By holding the rib caps in place and setting the clips to the bar, we accomplished a better fit," says Scudieri. And contour problems were eliminated. To celebrate, Scudieri plans a week vacation.

Other winners:

$915 —Alfred Dobler, Pl. 66.
$870 —Paul Hammers, Pl. 1.
$635 —Ray Amendola, Pl. 2.
$440 —Paul Hammers, Pl. 1.
$425 —Sal Mazzella, Pl. 2.
$400 —Methody Sirket, Pl. 12.
$365 —Fred Pacelli, Pl. 2.
$305 —Billy Cotts, Pl. 88; Frank Posillico and Donald Kowalski, Pl. 6.
$300 —Billie Brown and Ernest Baker, Pl. 6.
$290 —Tony Drago, and Annie Farley, Pl. 66.
$280 —John Walker and August Millang, Pl. 5.
$260 —Jack Abramowitz and Charles Dietz, Pl. 40.
$240 —Herman Kovler, Pl. 2; Gerald Teti, Pl. 3.
$229 —Louis Epaminode, Pl. 5.
$210 —Sanny Blizzard and Leroy Foston, Pl. 66.
$205 —Thurman Hicks, Pl. 66.
$200 —Erwin Giesemann, Pl. 30; Jim Scott, Pl. 66; Joe Murgia, Pl. 8.

Paul Scudieri

Personals

We wish to thank our many friends for the kind expressions of sympathy during the recent loss of my father. George and Jeanne Schreiber

We want to express our sincere thanks and appreciation for the kind and understanding expressions of sympathy during the recent loss of our son, E. Ken Williams Jr. E. Kenneth Williams Sr.

The family of Charles T. Sohl acknowledges with gratitude the expression of sympathy and kindness shown by his coworkers. Pamela Sohl

We wish to express our sincere appreciation for the many expressions of sympathy received during the recent loss of my mother. Peter and Patricia Ferrone

GRUMMAN plane news

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Military Experience Leads To Ne

Great River Operations is making its way into the commercia

When forecasts say that a big sector of business you're most dependent on may be declining, you've got to look for new places to get business.

What Great River Operations found is the commercial electronics market. In a little over three years, Great River has developed a commercial business base totalling $54 million today from a single, $600,000 contract in 1977. They have increased their percentage of commercial business each year and last year the $11.8 million of commercial business was over 11 percent of the total business volume.

Says Bruno Caputo, the general manager of Great River Operations, "I think we have proven to ourselves and the company that we do have a viable commercial business capability here, and we've been able to market that capability while maintaining our traditional role as a supplier of quality electronics to our prime military programs."

New direction

Presently, some 1,400 people work in Great River's Plants 43 and 44. The facility opened its doors in 1974 to manufacture electronic ground support and avionics equipment for Grumman aircraft.

The idea to develop a commercial business grew from forecasts in 1977. They showed that the amount of business for Great River's mainstays of aircraft electrical and electronic equipment would not be enough to support the workforce and plant capacity in the 80's.

"In 1977, we were in a situation where we had a motivated workforce and a fine electronics facility, probably one of the best in the country," says Caputo. "But our five year projections said we would effectively have to throttle down the facility because the prime government business wasn't there."

With no desire to throttle down, Great River had to find new opportunities. "We began to look to see if there was a market for our skills, one," he says, "where we could be competitive.

"But we had an image problem. We were perceived as a high cost aerospace producer and were virtually unknown in the commercial electronics marketplace."

They took a big step in overcoming that problem with the 1977 contract with IBM.

IBM's Essex Junction, Vermont, plant was in need of a high technology manufacturing source to produce test equipment called ACE. Grumman won the job competitively and has delivered 37 systems to date. IBM originally supplied the material and Great River assembled the units. Follow-on contracts have evolved to the point where Great River does the full job, from procurement to the final 'grooming', which is done by a team of Great River people on site at Essex Junction.

A colorful tale. *What Ken Gregory is watching is a colorgraphic display of a circuit on a CAT tester. Using the colors green, red and yellow, the computer shows the technician whether the circuit, or any part of it, is good or not.*

Word gets around

The "high-cost" image evaporated with the first ACE tester delivery and, according to Caputo, the word of the quality of work at Grumman spread.

Today, three years after that first major contract, Great River has built electronic equipment for other companies — General Electric, Safe Flight and Xerox, among others — though their biggest commercial customer is still, by far, IBM. In addition to the ACE tester, Great River has three major IBM programs. Two are also testers: the LTX tests printed circuit cards, the MTTS tests memory chips.

The third is a sophisticated new piece of equipment, the EBL. "IBM is five years ahead of everyone else," says Caputo about this new machine. The EBL (which stands for Electron Beam Lithography) is a new tool used by IBM to write circuits on a silicone wafer to a line thickness 10 times thinner than a human hair. Grumman is under contract to IBM to build three of these systems. A special "clean room," where all dust and other particulate matter is filtered from the air entering the room, had to be constructed in Plant 44 to build the EBLs.

The initial contract is worth about $6 million and the first unit should be delivered in December. Expectations are that Grumman will be building these units for several years.

More diversity

In addition to increasing its list of commercial orders in 1981, Great River has proven a new capability, one which should attract both military and commercial customers. With the construction of a new tester for the Navy, Great River, working with ATE systems, has shown that sophisticated computerized testers can be quickly configured and built from a selection of off-the-shelf electronic components.

This new approach is called modularity, and it has appeared in its most significant manner in the RADCOM (Radar Communications) test unit, which the Automatic Test Equipment group in Plant 31 designed for the Navy.

The significance of RADCOM, according to ATE's program manager Ed Stroud, is that Grumman can produce a wide range of testers for both the military and private industry from a number of off-the-shelf modular electronic units. It took only about a year from the time a contract was signed to build RADCOM, a computerized automatic tester (CAT) designed to test the E-2C Hawkeye's radar communications gear. The Navy will eventually place this unit aboard America's newest carrier, the *U.S.S. Carl E. Vinson.*

According to Stroud, it would normally take three to four years to design such a system from scratch. "We can easily configure a system for a specific need," he says, "because the equipment is based on these modular components. This design flexibility is inherent in all CATs."

/ Business

electronics market

Great River manufactures about 75 percent of the individual pieces of equipment which make up a RADCOM.

Great River is also marketing another product line. For those electronic manufacturers with their own line of modular gear Great River offers bonded enclosures. These lightweight, aluminum housings are offered in a number of basic sizes and can be modified to hold unusual electronic equipment.

Beyond building modular components and "built to print" equipment, Great River is pursuing design and development work in the commercial marketplace, according to Caputo, to take advantage of "home-grown" design talent.

One opportunity they are developing is for more business building measurement and exploration systems similar to what they are working on now, with Grumman Houston, for Schlumberger Well Services. That contract, won in February and worth 8.5 million dollars, gets Great River firmly into the petrochemical business. It calls for the building, testing and delivery of 60 Cyber Service Units (CSU), through 1982. The CSU's are high-technology electronic systems used on oil drilling platforms to determine the quality and location of oil and gas deposits. The program has an excellent long-term follow-on potential, according to Caputo.

Great River has also been successful in penetrating their other targeted commercial market — the television broadcast industry. They have received a contract worth one million dollars from the National Broadcasting Company to build a Timing Reference System. Future awards are expected this summer and early in 1982. And, coming full circle to where it all began, there is a possibility of a new generation of ACE tester, though this will probably be an IBM design.

Learning Process

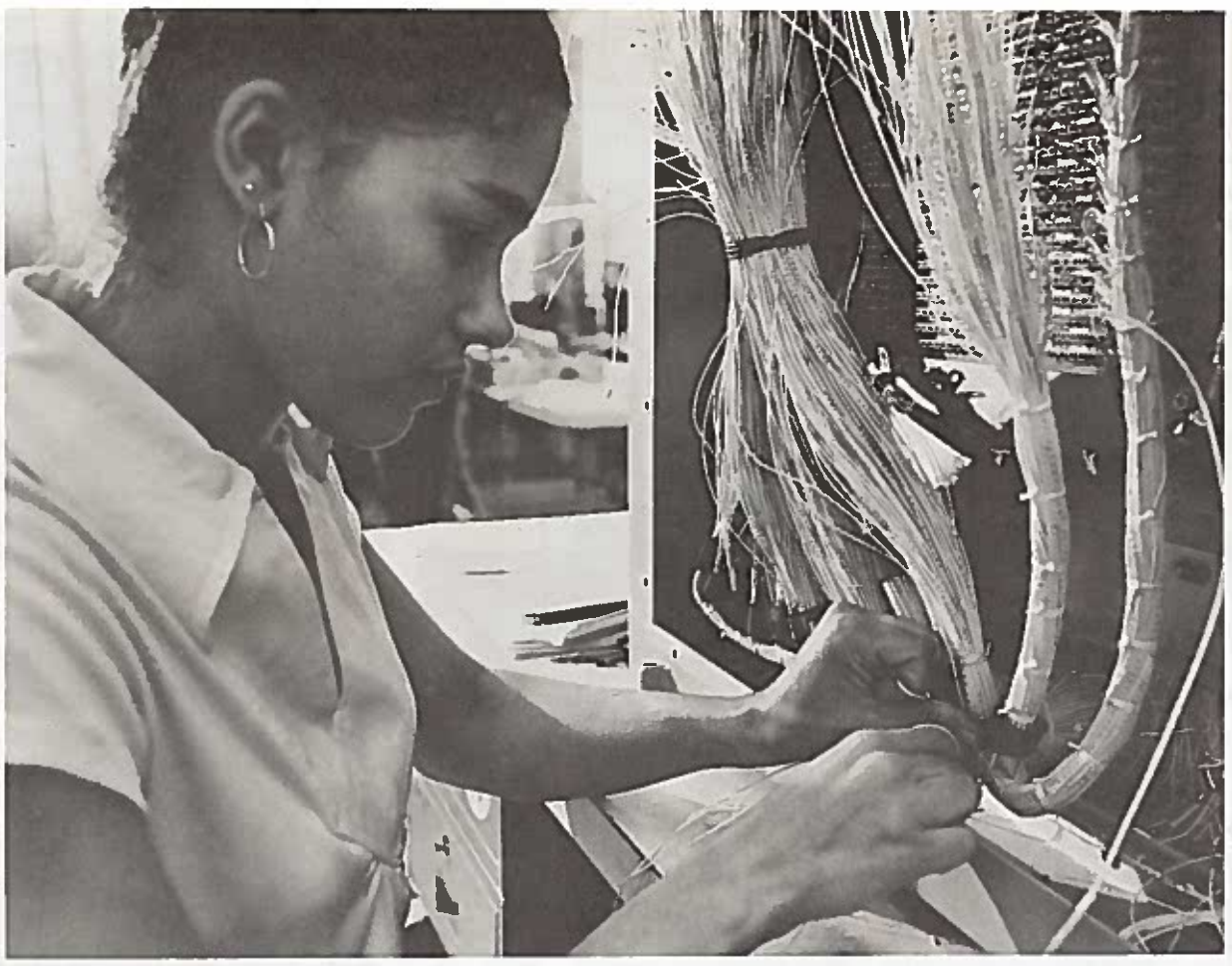
The lessons Great River has learned about the commercial marketplace are important.

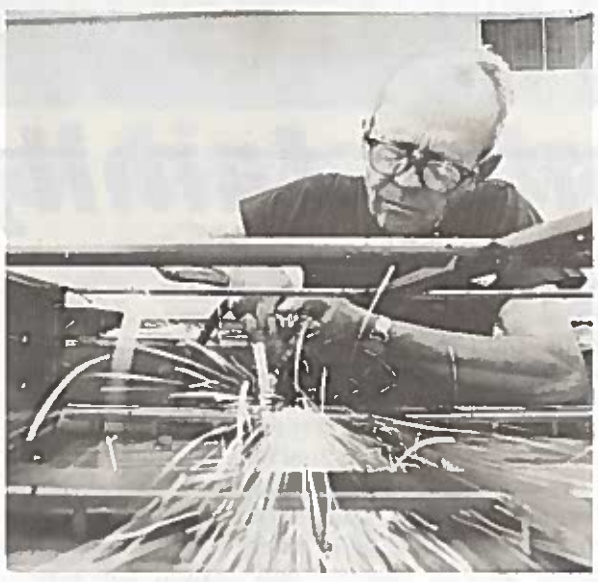
The government, for example, puts together five year development plans which are open for all contractors to see. What's different about the commercial marketplace, Great River has found out, is that it's often difficult to see what kind of products potential customers are planning. "You've got to follow all your leads," Caputo says.

"Once we determine what jobs we *might* be able to bid on, we've got to sit down and think out whether the job really falls into our areas of expertise. We try to keep to what we're good at," says Caputo, "and be very aggressive in our bidding strategies.

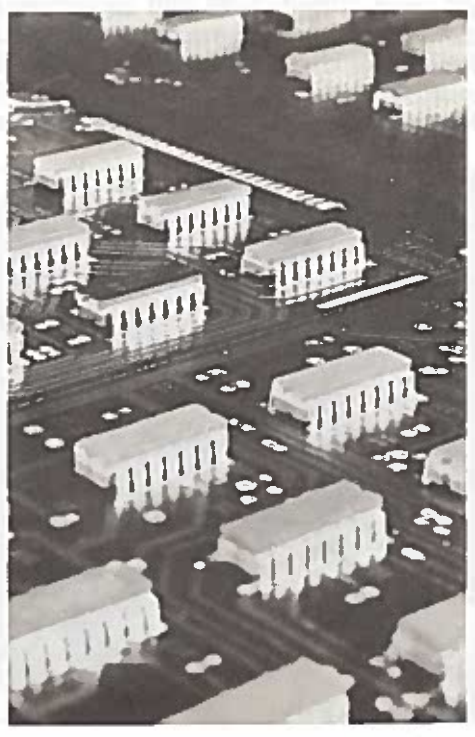
"We've shown that we've been able to penetrate the commercial market and win business while continuing to meet all budget, schedule and quality requirements for the GAC aircraft and ground support equipment programs."

Great River has set a goal. The goal is that, within five years, 60 percent of Great River's operations will be dedicated to manufacturing aircraft and ground support equipment and the remainder to commercial business.





Takes know-how. *It takes skilled people to build sophisticated electronic equipment. People like Barbara Hammonds (above), who is tying off a section of wire on an EF-111 component, John Pierce (L), who is working on a bonded enclosure and Otto Stanaitis (below, R), who is setting up a CAT tester to try out a test program he has written for an EA-6B exciter box, all help to make their products well-received by the commercial electronics world. The products they make can be as small as this circuit board of numerous integrated chips (below, R).*



It was a great day for kids . They joined sack races, 50-yard dashes ...

Grumman family picnic '81

No one had to call to find out if the picnic was still on. From the time the sun rose on July 18, there was no doubt that it was perfect weather for the forty-first annual Grumman Family Picnic at Calverton: hot, sunny, blue skies all day.

Maybe that's why the lines started so early. The gates officially open at 8 a.m. and the flag raising ceremony isn't until 10 a.m., but Grummanites and their families were lined up for over a mile by 7.

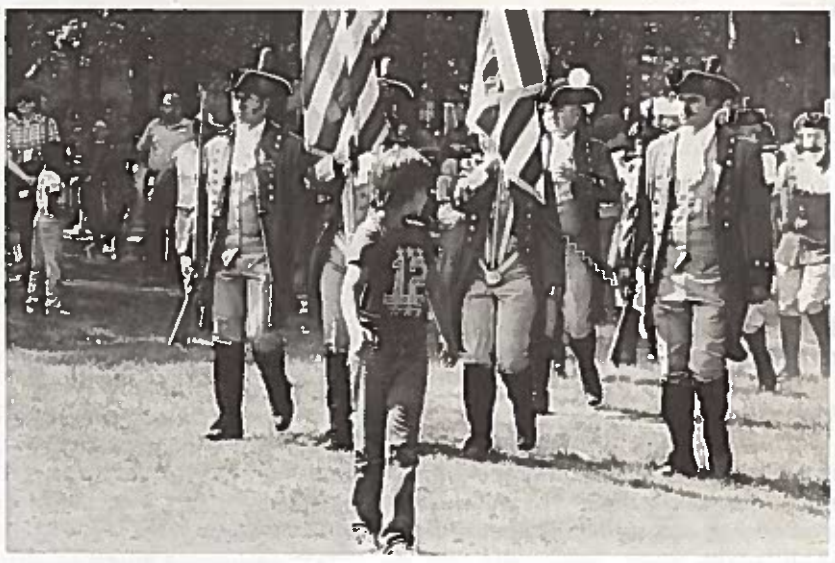
Although attendance was down a bit over last year, ("only" 25,000 or so came through the gates, according to ESO director Charlie Fuschillo), the Grumman family still managed to down all two-and-a-half tons of hot dogs, 75,000 glasses of beer, 72,000 glasses of soda, and 33,000 cups of ice cream. Grumman Aerospace President George Skurla got on line for hot dogs once or twice, too. But he spent most of his time talking with Grummanites and meeting their kids along with Grumman Corporation Chairman Jack Bierwirth and President Joe Gavin.

It was a great day for kids. They ran back and forth from the food stands to the merry-go-round and the other rides. They joined sack races, 50-year dashes, and waited for helium balloons given out by the Industrial Safety and Hygiene department. By 11 a.m. the green Safety balloons were everywhere. One five-year old patiently tied one after the other onto the belt loop of his jeans, convinced that maybe the next one could carry him sailing above the trees.

The Pride of Workmanship booth was also popular with the kids. When word got around that yellow foam frisbees were to be given out, kids stormed the booth from all corners of the picnic grounds. "I couldn't believe it," said Ronnie Palumberi of Plant 6. "We had thousands of the things, and they were gone in less than 10 minutes!"

Arnshea Clayton, a six-year old in a Tomcat shirt, came a bit too late to claim his. "Okay," he said, "I'll go get some more hot dogs and come back later." Ronnie Palumberi promised to save him one.

The music played all day: the Grumman Employees Band, the Grumman Rock Band, and



keeps good times tradition

the Minutemen Drum Corps of Long Island offered something for everyone. A puppet show, a magic show, a jazz band, lots of clowns, and the St. Ignatius Drum and Bugle Corps completed the afternoon's entertainment.

More than 300 Grummanites pitched in this year to make the picnic a success — people from Employee Services, from Facilities, Security, Medical, Transportation, and many other departments.

A great number of them, like Anton Bartholdus, have been volunteering for many years. Anton, a 28-year Grummanite from Plant 31 Environmental Test, thinks the beer stand is one of the best jobs at the picnic. "You see all the oldtimers here," said Anton. "If you work the ice cream stand, all you see are kids all day long. Which is okay, too. But I like this because I get to see all my old friends. It's a lot of fun."

Don Hrubes of Plant 1, looking very much the bartender as he fills up pitcher after pitcher of beer, agrees. "It's a good opportunity to make new friends, too," he says.

Arnie Vincent of Plant 6 likes helping out at the hot dog stand — "Even though it gets a little warm in here," he says as he throws more franks on the fire.

But Frank Maldonado at the paging booth, surrounded by children who've wandered too far away from their families, thinks he's got the best job at the picnic. He dries their tears, gives them ice cream, and calls their parents' names over the public address system. "And we get to keep anyone who's not claimed by the end of the day," he grins.

Helping Frank hand out the hankies and the dixie cups were Laura Wilson and Patty Burden, both summer students assigned to Employee Services.

"Sometimes you really have to calm them down so you can understand what they're saying," says Laura. "But most of the kids stop crying once they get their ice cream."

Some of them start crying again, though, when it's time to pack up and go home. They want one more hot dog, one more ride on the merry-to-round, one more hour to play. And since 1941, Grumman parents have been consoling their hot, tired little kids with the same promise: we can all come back again next year.

We can all come back again next year.

'My father builds planes ...'

It wasn't easy to catch them on the run. But when the kids at the Grumman Family Picnic stopped for a second to catch their breath from all the rides, races, and ice cream, PLANE NEWS seized the moment to ask them just what it was they thought their Mom or Dad did for Grumman. This is what they had to say.

Stephanie Sagristano

My grandfather makes airplanes at Grumman . . . and he makes money. He brings us pictures of the planes and tells us stories about them.

Peter Sagristano, a grinder in Plant 2, has been with Grumman for 12 years.

Tom White

My dad makes sure that the parts get where they have to go for the planes. They have to be on time and he makes sure they get there.

Tom White, a 20-year Grummanite, is supervisor of the F-14 Material Management in Plant 25.

Matt Suchocki

What my dad does is work with the planes. He helps make the panels and does the wiring . . . he checks everything out and makes sure that it all works.

Jim Suchocki works in Plant 6's Electrical Installation department. He has been with Grumman for 15 years.

Anthony Barbieri

My sister works for Grumman — she works on computers. I think she repairs them and stuff. And my father builds planes. Yup, *I'm* gonna work for Grumman, too!

Frank Barbieri, a systems analyst for Grumman Data Systems, has been with the company for 15 years. Linda Barbieri, a six year Grummanite, works in Plant 43's Electrical Harness department.

Maribeth Maslak

My father is a manager of Salary Administration. I don't know what he does exactly, he goes down to Georgia and gives lectures.

Frank Maslak has been with Grumman for 15 years, and he works in Plant 28.

Lonnie Lyons

My brother works for Grumman. Well, actually he's my uncle, but he's like a brother to me. I think he works on airplane projects . . . he puts airplanes together, that's what he does.

Joe Cambridge works in Plant 3's Assemblies department, and has been with Grumman for 15 years.

Lilly Nettles

My father is a guard at Grumman, but I'm here with my mother and my sister because my Dad is working today.

Joe Nettles works in Plant 6 and has been with Grumman for 15 years.

Kathleen Dooley

My dad works on airplanes. I want to know why they took the caterpillar and tea-cup down. . . they were my favorite rides.

Robert Dooley is a group leader in Weld Tooling, Plant 2, and has been with Grumman for 22 years.

Stephanie Sagristano

Lonnie Lyons

Anthony Barbieri

Maribeth Maslak

Lilly Nettles

Matt Suchocki

Kathleen Dooley

Tom White

Don't wait for the oil bill

A sure fire way to become energy conscious is to hear from your local utility company or heating fuel man. Energy costs are going up . . . again.

Now might be the opportune time to conduct an energy survey of your home. Before old man Winter knocks at your door, you'll be able to make improvements to your home that will save money — and energy.

Here are a few sources for home energy survey kits:

Cooperative Extension — Suffolk County offers a 95-page booklet, "Save Energy, Save $$$." This booklet can be picked up at 246 Griffin Avenue in Riverhead for $1.50. A higher fee is charged for home delivery.

New York State has two free home energy audit workbooks, No. 1 and No. 2. Call this toll-free number during regular working hours for your copy: (800) 342-3722.

LILCO offers three home energy audit programs. The first is an audit performed by a LILCO professional right in your home. The cost: $10. If you wish to perform your own audit, it will cost you $2. In both programs, the customer receives a computer read-out which lists suggestions and improvements which will help in your home energy conservation program. LILCO's third program is free. LILCO will send you a booklet on how to perform and evaluate your own energy audit. For more information on these LILCO programs, call 228-2011.

A night for pin pals

On Saturday, September 19, the 1981 Grumman Candelight Bowling and Buffet Night gets underway at the Woodbury Lanes in Plainview at 7 p.m.

No more than 180 bowlers can participate in this one night event. The three-games and a hot and cold buffet costs $8.95 per couple. Any combination of partners may be entered.

Entry deadline is Tuesday, September 15. For more information, contact Herb Mahoney, Ext. 2133.

Personals

I would like to sincerely thank the Corporation and all of my many friends and associates for their kind expression of sympathy and support on the recent loss of both my father and mother, Tommaso and Maria Annunziata. Your caring is deeply appreciated. They will be greatly missed. **Caroline (Nikki) Wright**

Please accept my thanks and sincere gratitude for your moral support and generosity during my recent illness. **Frank Magro**

I have been absolutely overwhelmed by the outflow of kindness, affection and support by so many Grummanites during my recuperation from injuries sustained in a recent accident. I want to take this opportunity to express my sincere thanks and warm regards to you all. **Jerry Gottlieb**

We wish to express to all our Grumman friends and co-workers our deep and sincere appreciation for the kindness, generosity and sympathy shown during the recent loss of our Granddaughter. **The Family of Pat and George Furlong**

Varsity humiliates national champs — again

This tournament, the second annual Grumman Invitational Softball Tournament, was owned by Grumman. Not because the Grumman varsity was the host team, but because they were awesome. Unbeatable.

Grumman took the short route up the nine-team tournament ladder to win its second straight tournament this season (and its second Grumman tourney).

Grumman met the first of the three teams it would face, Fairchild Republic, on Friday, July 10, at 8 p.m. Before the lights came on the field, they began to go out for Fairchild. The second, third and fourth men up in the bottom of the first inning for Grumman, Bob Beattie, Mike Gallo and Larry Bates had Fairchild outfielders looking the other way, watching their long home runs carry over the fence.

"You've got to keep scoring runs in this game," Grumman manager Jack Keane explains. And his team follows orders. They built up a 16 run lead going into the last inning.

Meanwhile, the defense held Fairchild scoreless. Fine plays like Bill DeWitt's leaping catch of a sizzling liner over first base on the first play of the game, Mike Gallo's great catch of a dying liner to center, several excellent stops by pitcher Tom Marion, an intense player who seems to dare the hitters to try and put one past him, and other fine fielding plays frustrated Fairchild efforts.

Grumman won, 16 — 2.

Atta way! *Joe Collelouri gets 'high fives' from Mike Gallo and the rest of his teammates after blasting one of the four homers which helped the Grumman catcher win the tournament's MVP award. That's Grumman Manager Jack Keane in the background.*

First things first

Grumman really wanted to get at their rivals, Sikorsky. Grumman's next game was scheduled for 12:30 on Saturday, against a yet to be chosen opponent, but the players were looking towards 6 p.m. That's when the fireworks would begin. Sikorsky was on everyone's mind. Dom Pagnozzi, out of the tournament with an injury, said, "They're not your typical industrial team." "That's the game," coach Joe Cavalluzzo explained. "That's the team to beat."

Though everyone was confident, Kean was trying to put it all in perspective. "I don't like to put them in the bank till we win them. The Fire Department," he said, talking about one of the two teams his team could face first the next day, "they could be a sleeper. They've got a couple of guys that play with some 'open' teams that we play."

Unfortunately for the Fire Department, they were beaten by Hazeltine. Unfortunately for Hazeltine, they had to face Grumman.

The first twelve men to face the Hazeltine pitcher hit safely. The Grumman varsity went on to walop Hazeltine by a 29-11 score.

Sikorsky didn't win the national championships on a fluke and, though they lost two out of three games to Grumman in this year's Glen Cove Tournament and last year's Grumman tourney, they weren't about to lay down and die. "Always rough. Always rough," said one Sikorsky player as he trotted back to the bench at the end of the second inning, after Grumman had taken a slim lead.

Sikorsky got the lead back.

According to Jack Keane, a team has to try and put at least one run on the scoreboard every inning. Grumman couldn't score in the third and Sikorsky started building a lead, looking stronger. By the middle of the fourth, they had a 9-6 lead.

Then, Grumman began to show the strength they hope will take them to a national title. Joe Collelouri, whose 12 hits (four home runs) in 14 at-bats would win for him the Most Valuable Player trophy, homered. Mark Cleary singled. Frank Straub singled off the second baseman's glove. The second baseman errored again and suddenly, Grumman had the bases loaded.

"When you get an error, you've got to jump on it," Keane says. They did. Mike Gallo singled and, with the aid of another Sikorsky error, three runs scored. Larry Bates followed with another homer. A bouncer to short and an easy flip to second should have put a stop to Grumman's assault. It didn't. Sikorsky's second baseman was having all his bad luck in this inning. He dropped the ball and Grumman had the bases loaded again.

Tony D'Ambrosio singled home three more runs. After two more hits by Cleary and Straub the inning mercifully ended with Grumman leading 17-9.

Sikorsky wasn't quitting and, down 18-9 in the top of the sixth, they counterattacked.

Quickly, the first two batters were on base. Sikorsky's second baseman was up and trying to redeem himself. He belted a three-run homer.

It looked as though Grumman would stop Sikorsky there when Tom Marion started a double play. But Sikorsky had another string of hits to boost the score to 18-14 before the inning ended.

Having held Grumman scoreless in the bottom of the sixth, Sikorsky tried one last time to save the game. They scored one run, no more. It was over. Sikorsky's manager Al Morazes shook his head after the game. "We had them. We gave them 11 runs." Sikorsky would have to fight their way out of the loser's bracket to get another shot at Grumman.

Not quite a replay

Grumman may have been in a bit of a slump in their regular season games before the tournament but, said Mike Gallo, "We're hitting once more."

In the final game, against Sikorsky once again, they were hitting even more. As they had been throughout the tournament, they were aggressive on the base paths, moving runners up on fly balls. Stretching hits. Grumman led 9-3 by the middle of the third; 17-3 by the bottom of the fifth. Everyone was hitting.

Sikorsky was being stymied by stellar fielding. For example, Grumman shortstop Mark Cleary was on the front end of three double plays.

By the middle of the seventh Grumman had a 22-6 lead. Sikorsky tried desperately to come back with only three outs left, but Keane and his team could take this one to the bank. The final score was 22-9, "Just one of those games," Morazes said, "we'd rather forget."

Next stop

On August 8 and 9, the Grumman varsity will play in the Regionals. Finishing first on second will qualify them for the Nationals, where first game jinxs have cost them dearly in the past. "It's a tough tournament," says Keane. "One bad break and you lose. If we win that first game, we could go crazy."

Angels speak

Want to get close to an angel? A Blue Angel, that is. If you're quick enough to get one of the limited number of tickets abailable, you'll be able to hear one or two members of the famed flying group speak on Thursday, July 30, at 7 p.m. in the Recreation Building.

The speaking engagement is sponsored by the GACE (Grumman Aerospace Corporation Employees) Flying Club. According to Carl Echols, the club's president, the free tickets will be available in Employee Services offices.

milestones

(Continued from page 4)

Odd E. Sangesland, Equip. Therm. Des. (25)
Barbara H. Fox, Pers. Admin. (28)
Bernadette Shea, Matl. Accounting (30)
Everett K. Bennett, Ops. Qual. Mgt & Admin. (35)
Joseph La Rocca, Career Ed. & Dev. (39)
Harry J. Newman, Logistics (40)
Robert A. Click, Spc. Proj. Prototype-Temp. (43)
Frank B. Rom, Elect. Box Pan/Draw Fab. (43)
Thomas Rabbitt, Reqts. Plnng. (43)
Donald J. Sheehan, Mgt/Staff (43)
Thomas R. Haller, Matl. Cntrl. (66)
Robert W. Hubbard, Aircraft Avionic Sys. (81)
Arthur C. Duffield, Field Admin. & Liason (86)
Michael Kelly, Trans. Ops (2)
John Leoniak, Mech. Des. Staff (35)
Francis Schleider, Program Mgt. (43)

20

Richard A. Petrucci, Assy. Method & Plnng. (2)
Marcus A. Weisgerber, Maint-Facil. Equip & Gen. (2)
Frederick A. Caretto, Insp-Mech. (2)
William W. Buchman, Convent. Machs. (3)
Peter D. Tyer, FTT Sys. (4)
Harold P. White Jr., Presentations Servs. (5)
Stephen M. Greene, Sys. Des. (5)
Charles R. Belensky, Corp. Instr. Ground Test (5)
Jackie D. Ingold, Customer Reqts. (5)
Daniel T. Crowley, Corp. Sys. (5)
Joseph R. Bolze, Meas. Standards (6)
John P. Hanish Jr., Software Anal. (14)
Edward Hiller Jr., Trans-Ops. (20)
Eileen M. Noon, Prog. Matl. Mgmt. (25)
William E. Nelson, Subsystems (30)
Edmund S. Schiavoni, Prog. Proc. Hydrofoil (32)
Charles A. Parente, Dynamics (35)
Peter Beaton, Navig & Cntrl. Equip. Des. (35)
Frederick Steenson, B/P Warehouses (37)
Ralph Lishansky, Instruct/Anal. (39)
Joseph Bartolotta, ILS Comp. Sys. (40)
Daniel H. Egan, ILS Pubs. Mgmt. (87)

15

Henry H. Windhorst, Sub-Assy Major (1)
Wayne T. Voigt, Sub-Assy Major (1)
Charles M. Popeleski, Final Assy. (1)
Alfred T. Miller, Prod. Cntl-Parts Cntrl. (1)
Henry A. DeFries, ILS Comp. Sys. (1)
Thomas W. Cashel, ILS Elect. Pack. (1)
William C. Harrell, ILS Sys. Tech. Proj. Mgt. (1)
Walter Mickle, ILS Verif. & ILS Supp. (1)
Czeslaw Smakowski, ILS Reqt. Def. (1)
James E. Gillespie, Food Service (1)
Edward H. Spencer, A/C Sys. Serv. (1)
Mary E. Cheshire, BPA Q.C. Mgt/Admin. (1)
Kurt J. Maier, Insp-Elect. (1)
Joseph P. Contento, Drop Hammer (2)
Georgette D. Wanzer, Mfg. Proposal Mgmt. (2)
Richard C. Gragnaniello, Tool Cntrl. (2)
Lillian T. Kipybida, Telecommunications Servs. (2)
Wilbur D. Van Valkenburg, Food Serv. Acct. (2)
Randell C. Jensen, Press (3)
Vito Germinario, Convent. Machs. (3)
Cosmo J. Sisco, Convent. Machs. (3)
James T. Seage, Convent. Machs. (3)
Steven W. Januszkiewicz, Honeycomb Core Details (3)
William F. Reuschle, Honeycomb Prep. (3)
Vincent J. Pennell, Maint. Indust. Cntrl. (3)
James R. Bond, Maint. Wast. Dispos & Grond. (3)
George T. Tresham, ILS Verif. & ILS Supp. (4)
Roy J. Champagne, QC Quality Eng. (4)
Mieczyslaw Borowiec, Static Test (5)

An uplifting experience. *During the 24 hour period beginning at 2 p.m. on June 27, over 120 members of the Grumman Amateur Radio Club and their families and friends participated in a nationwide exercise called 'Field Day.' The purpose of the exercise is to help strengthen the amateur radio network in this country. The club, here setting up an antenna atop a truck, operated under field conditions, using gas generators to power their transmitters. They made some 2,100 contacts during the exercise. Point standings for all the groups participating in the exercise will be published by the sponsoring group, the American Radio Relay League, next January.*

Kegler clinic

The 1981-82 bowling season is just around the corner. If your game was a little rough around the edges last season, why not take advantage of the free Recreation-sponsored bowling clinics next month.

Two clinics are on tap. The Clinic-West will take place at the Sheridan Lanes in Mineola on August 4-5 from 5 to 6:30 p.m.; the Clinic-East is slated for August 11-12 from 4 to 5 p.m. at the Centereach Lanes.

To reserve your spot at these clinics, call Herb Mahoney, Ext. 2133 or 2269.

calendar

Alcoholics Anonymous: every Mon., 4:30 p.m., Plant 15, conference room C, closed meetings; Personnel Relations, Ext. 3521; Calverton: Chemical Dependency Discussion Group, every Mon., 4-5 p.m., Hdg. Bldg.; open meeting. C. Robb, Ext. 117-6526.

Amateur Radio Club: every 3rd Wednesday of the month. Wed., Aug. 19, Pl. 5, conference room BD-1, 5 p.m. D. Townes, Ext. 2889

Coin Club: (Bethpage) Wed., Aug. 12, Pl. 25 vendor conference rooms, 12:05 p.m. Informal lunchtime meeting. K. Hale, Ext. 3717

French Club: Tues., Aug. 11 and Tues., Aug. 25, 123 Grohman's Lane, Plainview, 5:30 p.m. Guests welcome. L. Kaufman, Ext. 2323

GACE Flying Club: Mon., Aug. 10, Recreation bldg., 5 p.m. Regular monthly membership meeting. Guests welcome. R. Reisch, Ext. 5967

Grumman Ski Club: Wed., Aug. 19, Tiki Lounge, Commack, 8:30 p.m. Summer program, camping, canoeing etc. Guests welcome. A. Garmendia, Ext. 7819/8910

Grumman Toastmasters Club: Wed., July 29 and Wed., Aug. 12, Pl. 111 buffeteria, 5 p.m. Guests welcome. C. Peterson, Ext. 4930

Klown Klub: Tues., Aug. 11, Recreation bldg., 4 p.m. Make-up and balloon designing. Beginners welcome. Mel, Ext. 113-7723

Motorcycle Club: Wed., Aug. 19, Recreation bldg., 5 p.m. General meeting. K. Mann, Ext. 5195

GRUMMAN plane news

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